

III. *On some of the Butterflies of Tobago.* By G. B.  
LONGSTAFF, M.D., F.R.C.P., F.E.S.

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A GLANCE at the map shows that this island stands outside the crescent of the Lesser Antilles, or Windward Islands, about 20 miles to the north-east of Trinidad in latitude  $11^{\circ} 15' N.$  The southernmost of the Windward Islands proper, Grenada, is about 70 miles W.N.W. of Tobago. It is therefore pretty obvious that, geographically speaking, Tobago belongs to South America rather than to the West Indies. The mountains of the north-east coast of Venezuela, consisting for the most part of clay-slates and schists believed to be of Silurian age, run by way of the peninsula of Paria and the islets of the Bocas, along the northern coast of Trinidad, and would appear to be prolonged to the eastern half of Tobago. <sup>4</sup>

In area Tobago is about equal to the county of London, comprising but 114 square miles, and therefore only about three-fourths of the size of the Isle of Wight, and only one-fifteenth of that of its neighbour. (Trinidad area, 1754 square miles = Lancashire.) The south-western portion of the island, which is low and more or less flat, is formed of coralline limestone, and is completely cultivated. The central and north-eastern portions are hilly, rising to 2000 feet, and in large part covered with forest, some of it virgin, but much of it of second growth, or "rastrajo." The destruction of the forest is proceeding apace.

My stay was limited to eight days, April 3-10, 1907, of which, thanks to the hospitality of the Hon. H. L. Thornton and Mr. G. H. Sworder, three were spent at their estate, "Cocoa Wattie," the remainder near the coast.

We found the neighbourhood of Scarborough, the capital, for some miles on either side of the town very dry and parched, though we were told that there had been "some nice showers at night" during March. The Trade-wind blows very strongly along the coast, a dry, hot wind which greatly increases the difficulties of the collector.

Cocoa Wattie is a plantation near the middle of the  
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island towards the confines of cultivation, lying about 550 feet above sea-level. The wooded banks of a small river and some swampy hollows clothed with coarse grass and thin scrub afforded the best collecting grounds, and yielded, as might have been expected, a somewhat different fauna from that of the coast. It rained heavily on April 8th.

*Anosia archippus*, Fabr. 3 ♂, 1 ♀. Rather common in the outskirts of Scarborough; one specimen at Cocoa Wattie. Those taken resemble the specimens from the mainland, though one individual, a ♂, approached Jamaican specimens in colouring.

*Euptychia hermes*, Fabr. (*camerta*, Cram.). 5. Abundant at Cocoa Wattie.

*Euptychia hesione*, Sulz. 6. Common at Cocoa Wattie.

I have taken this species and the following flying during rain.

*Heliconius hydara*, Hew. 3 ♂, 2 ♀. Rather common on the river bank at Cocoa Wattie. All the specimens are small, three extremely small; four of them have the bluish gloss (as in the form *guarica*, Reak., though that is a larger insect) which Mr. W. J. Kaye associates with wet conditions.

*Precis lavinia*, Cram. (*f. zonalis*, Feld.). 2 ♂. An example taken near the coast of the dry form, but with the anterior ocellus on the hind-wing very small. (Mr. W. J. Kaye has two very dark specimens from Mexico in which this ocellus is altogether wanting; in the National Collection there is a specimen from Colombia in which there are *no ocelli* on the upper surface, and only faint indications of them beneath.) The Cocoa Wattie example is "intermediate," approaching the "wet" form. Both the specimens would probably be called by Mr. Godman *cænia*, Hübn., and by West Indian entomologists *genoveva*, Cram.; I follow Mr. Guy A. K. Marshall's recent rearrangement of the splendid series at South Kensington.

*Anartia jatrophæ*, Linn. 3. On the coast, not common. Those taken are pale in colour and semi-transparent, of the mainland form.

*Anartia amalthæa*, Linn. One at Cocoa Wattie. Messrs. Godman and Salvin\* say of this species: "Barbados, a

\* Godman and Salvin, "Butterflies of St. Vincent, Grenada, etc.," Proc. Zool. Soc. London, 1896, p. 515.

single specimen . . . not previously noted from any West Indian island."

*Dynamine theseus*, Feld. This pretty little butterfly was common both on the coast and inland. It has a rapid gliding flight, but otherwise has some of the habits of a *Lycænid*, thus it often settles with its head downwards, and more than once I saw it move its hind-wings rapidly immediately after settling; the insect was, however, too shy to enable me to make out the exact nature of this movement.

*Cystineura cana*, Erichs. Two specimens on the coast, and two at Cocoa Wattie. It has a gliding flight.

*Leptotes (Tarucus) cassius*, Cram. 2 ♂, 2 ♀. Of the mainland form, in which white prevails over blue. Rather common along the coast; three specimens were small, but one female was larger than usual.

*Catochrypsops hanno*, Stoll. (? *monops*, Zell.). One specimen to the east of Scarborough.

*Thecla beon*, Cram. 4. One specimen on the shore to the south-west of the town at the flowers of the Sea-side Grape (*Coccoloba uvifera*, Jacq.); rather common at Cocoa Wattie, frequenting the flowers of a purple papilionaceous shrub.

*Thecla politus*, H. H. Druce. A ♀ at Cocoa Wattie.

*Thecla nubes*, H. H. Druce, n. sp. One specimen at the Sea-side Grape, near Hillsborough; four at Cocoa Wattie at the pink flowers of a creeper.\*

*Callicista bubastus*, Cram. (*salona*, Hübn.). One taken in Fort George, another at the flowers of the Sea-side Grape, near Hillsborough on the coast.

*Terias nise*, Cram., 3 ♂, 3 ♀, all of the "wet-season" form. Common near the coast.

*Terias albula*, Cram. 3. Near the coast, less common than the last; one taken two miles inland on the road to Cocoa Wattie.

*Pieris phileta*, Fabr. (*monuste*, Auct. nec Linn.). Two males under the coco-nut palms to the west of the town.

*Callidryas cubule*, Linn. (f. *seunæ*, Linn.). Abundant in Scarborough and along the coast towards the east, tearing about in all directions, but not at all common at Cocoa Wattie. Six ♂ and four ♀ taken, of these three were of the "wet-season" form, seven "intermediate," but all were

\* H. H. Druce, Proc. Zool. Soc. Lond., 1907, p. 625.

very small. I noted that the males were attracted in numbers by the flowers of the Pineapple (*Ananassa sativa*, Lindl.) in the Government Botanic Station.

*Phæbis agarithe*, Bois. 3 ♂, 1 ♀. Common to the east of Scarborough; very showy on the wing, though very difficult to catch, being not merely a strong flier, but also wary and seldom remaining on a flower for more than a few seconds, moreover it seems to like exposed places in the full blast of the Trade-wind. Those taken were all small, one male remarkably so; they are moreover much paler than specimens in the Hope Collection from Barbados and Venezuela.

*Eudamus catillus*, Cram. One small specimen on the shore to the west of the town.

*Pyrrhopyge venezuelæ*, Scudder. One at Cocoa Wattie.

*Hesperia syrighthus*, Fabr. Common on the coast; one example at Cocoa Wattie.

*Callimormus corades*, Feld. Three at Cocoa Wattie.

*Systæca crosa*, Hübn. One at Cocoa Wattie. In this species the fore-wings are remarkably convex.

*Epeus veleda*, Godm. and S. One at Cocoa Wattie.

*Megistias cortica*, Plötz. (*epiberus*, Mabille.). One at Cocoa Wattie.

*Cymænes silius*, Latr. One at Cocoa Wattie. This species rests with the wings in the same position as our *Pamphila thaumas* and *P. sylvanus*.

Of the 28 species in this list, 24\* are known to Mr. Kaye as occurring in Trinidad; those not met with in both islands being *Phæbis agarithe*, *Thecla nubes*, *Epeus veleda* and *Callimormus corades*. None of these is recorded by Messrs. Godman and Salvin from the Lesser Antilles.

As regards the general abundance of Butterflies, Tobago occupies a position between Jamaica and Trinidad. Whereas eight days' collecting in Tobago yielded 28 species, seven days' in Trinidad yielded 61; but it took ten weeks to get together 47 species in Jamaica. On the other hand, Venezuela proved much richer than any of these islands, for 135 species were collected in fifteen days.

In addition to the above I saw on the wing, about a mile from Cocoa Wattie, *Caligo* sp.; also Mr. Sworder gave me specimens of *Ithomia pellucida*, Hopff., and *Pteronymia asopo*, Feld., which he had taken at Cocoa Wattie, and he showed me specimens of other butterflies which I did not

\* Of these 24 at least 19 also occur in Venezuela.

happen upon alive, including *Morpho* sp. The Hope Collection has *Terias westwoodii*, Boisd., from Tobago. Neither this last named nor *P. asopo* have as yet been recorded from Trinidad.

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